

WHAT IS CLAIMED IS:

1. A solid electrolytic capacitor, comprising:

a substrate composed of niobium;

a niobium nitride layer formed on the surface of said
5 substrate; and

a dielectric layer composed of niobium oxide formed on
the surface of said niobium nitride layer.

2. The solid electrolytic capacitor according to claim

10 1, wherein

said substrate and said niobium nitride layer constitute
an anode.

3. The solid electrolytic capacitor according to claim

15 1, wherein

said dielectric layer is nitrogen-free.

4. The solid electrolytic capacitor according to claim

1, wherein

20 said niobium nitride layer is substantially composed of
Nb₂N.

5. The solid electrolytic capacitor according to claim

1, wherein

25 the nitrogen content based on the total weight of said

substrate, said niobium nitride, and said dielectric layer is not less than 0.001 % by weight nor more than 0.2 % by weight.

6. The solid electrolytic capacitor according to claim
5 1, wherein

the nitrogen content based on the total weight of said substrate, said niobium nitride, and said dielectric layer is not less than 0.001 % by weight nor more than 0.08 % by weight.

10 7. A solid electrolytic capacitor, comprising:
an anode composed of niobium nitride; and
a dielectric layer composed of niobium oxide formed on the surface of said anode.

15 8. The solid electrolytic capacitor according to claim 7, wherein

said niobium nitride is composed of NbN_x , where said X is not less than 0.05 nor more than 1.

20 9. The solid electrolytic capacitor according to claim 7, wherein

said niobium nitride is composed of NbN_x , where said X is not less than 0.05 nor more than 0.75.

25 10. The solid electrolytic capacitor according to claim

7, wherein

said anode is composed of a mixture of a plurality of kinds of niobium nitride containing nitrogen in different composition ratios.

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11. A method of manufacturing a solid electrolytic capacitor, comprising the steps of:

forming a dielectric layer composed of niobium oxide by oxidizing a surface of a substrate composed of niobium;

10 forming a niobium nitride layer between said substrate and said dielectric layer by thermally treating said substrate having said dielectric layer formed thereon in a nitrogen atmosphere; and

anodizing said dielectric layer.

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12. The method of manufacturing a solid electrolytic capacitor according to claim 11, wherein

the temperature in said thermal treatment is not lower than 300°C nor higher than 920°C.

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13. The method of manufacturing a solid electrolytic capacitor according to claim 11, wherein

the temperature in said thermal treatment is not lower than 300°C nor higher than 800°C.

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14. A method of manufacturing a solid electrolytic capacitor comprising the step of forming a dielectric layer composed of niobium oxide on the surface of an anode composed of niobium nitride by oxidizing a surface of said anode.